

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for producing a cycloolefin addition polymer, comprising

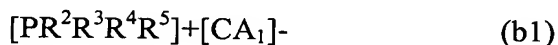
addition-polymerizing one or more cycloolefin monomers comprising a cycloolefin compound represented by ~~the following~~ formula (1), in the presence of a multi-component catalyst, comprising:

(a) a palladium compound, and

(b) one or more phosphorus compounds selected from the group consisting of the following compounds (b-1) and (b-2):

wherein (b-1) comprises a phosphonium salt represented by ~~the following~~ formula

(b1):



wherein P is a phosphorus atom,

R<sup>2</sup> is a substituent selected from the group consisting of a hydrogen atom, an alkyl group of 1 to 20 carbon atoms, a cycloalkyl group and an aryl group,

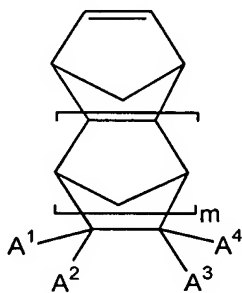
R<sup>3</sup> to R<sup>5</sup> are each independently a substituent selected from the group consisting of an alkyl group of 1 to 20 carbon atoms, a cycloalkyl group and an aryl group, and

[CA<sub>1</sub>]<sup>-</sup> is a counter anion selected from the group consisting of a carboxylic acid anion, a sulfonic acid anion and a superstrong acid anion ~~containing~~ comprising an atom selected from the group consisting of B, P and Sb and ~~[[a]] F atom,~~

wherein (b-2) comprises an addition complex of

a phosphine compound that ~~contains~~ comprises a substituent selected from the group consisting of an alkyl group of 3 to 15 carbon atoms, a cycloalkyl group and an aryl group, wherein the addition complex ~~and~~ has a cone angle ( $\theta$  deg) of 170 to 200,

and an organoaluminum compound;



(1)

wherein A<sup>1</sup> to A<sup>4</sup> are each independently ~~an atom or a group~~ selected from the group consisting of a hydrogen atom, a halogen atom, an alkyl group of 1 to 15 carbon atoms, a cycloalkyl group, an aryl group, an ester group, an oxetanyl group, an alkoxy group, a trialkylsilyl group and a hydroxyl group,

~~and~~ wherein A<sup>1</sup> to A<sup>4</sup> may be each bonded to a cyclic structure through a bond group of 0 to 10 carbon atoms, wherein said bond group ~~containing at least one group or atom is~~ selected from the group consisting of an alkylene group of 1 to 20 carbon atoms, an oxygen atom, a nitrogen atom and a sulfur atom,

wherein A<sup>1</sup> and A<sup>2</sup> may form an alkylidene group ~~of~~ comprising 1 to 5 carbon atoms, a substituted or unsubstituted alicyclic or aromatic ring ~~of~~ comprising 5 to 20 carbon atoms or a heterocyclic ring ~~of~~ comprising 2 to 20 carbon atoms,

wherein A<sup>1</sup> and A<sup>3</sup> may form a substituted or unsubstituted alicyclic or aromatic ring ~~of~~ comprising 5 to 20 carbon atoms or a heterocyclic ring ~~of~~ comprising 2 to 20 carbon atoms, and

wherein m is 0 or 1; to form the cycloolefin addition polymer.

Claim 2 (Currently Amended): The process for producing a cycloolefin addition polymer as claimed in claim 1, wherein the multi-component catalyst further comprises, in addition to the component (a) and the component (b-1),

(c) a compound selected from the group consisting of an ionic boron compound, an ionic aluminum compound, an aluminum compound of Lewis acidity and a boron compound of Lewis acidity.

Claim 3 (Currently Amended): The process for producing a cycloolefin addition polymer as claimed in claim 1 ~~or 2~~, wherein the multi-component catalyst further comprises, in addition to the component (a) and the component (b-2),

(d) an organoaluminum compound.

Claim 4 (Original): The process for producing a cycloolefin addition polymer as claimed in claim 3, wherein the content of the organoaluminum compound (d) is in the range of 0.1 to 200 mol based on 1 gram atom of palladium of the palladium compound (a).

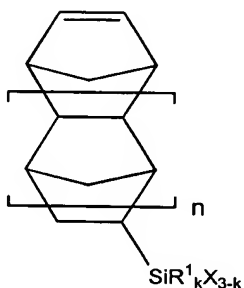
Claim 5 (Currently Amended): The process for producing a cycloolefin addition polymer as claimed in ~~any one of claims 1 to 4~~ claim 1, wherein the palladium compound (a) is an organic carboxylate of palladium or a  $\beta$ -diketone compound of palladium.

Claim 6 (Currently Amended): The process for producing a cycloolefin addition polymer as claimed in claim 1 ~~any one of claims 1 to 5~~, wherein the multi-component catalyst is a catalyst prepared in the presence of at least one compound selected from the group consisting of a polycyclic monoolefin ~~or non-conjugated diene having~~ comprising a

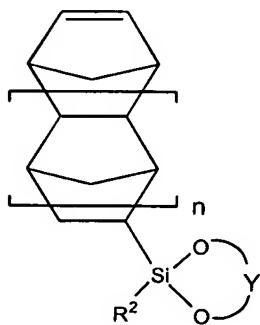
bicyclo[2.2.1]hept-2-ene structure, a non-conjugated diene comprising a bicyclo[2.2.1]hept-2-ene structure, a monocyclic non-conjugated diene, and a straight-chain non-conjugated diene, and combinations thereof.

Claim 7 (Currently Amended): The process for producing a cycloolefin addition polymer as claimed in claim 1 ~~any one of claims 1 to 6~~, wherein the multi-component catalyst is a catalyst prepared in the presence of bicyclo[2.2.1]hept-2-ene, ~~and/or~~ a bicyclo[2.2.1]hept-2-ene derivative ~~having comprising~~ comprising one or more hydrocarbon groups ~~of comprising~~ comprising 1 to 15 carbon atoms, or a combination thereof.

Claim 8 (Currently Amended): The process for producing a cycloolefin addition polymer as claimed in ~~any one of claims 1 to 7~~ claim 1, wherein the cycloolefin monomers ~~contain~~ comprise a cycloolefin compound ~~represented by the following~~ of formula (2)-1 or formula (2)-2:



(2)-1



(2)-2

wherein  $R^1$  and  $R^2$  are each a substituent selected from the group consisting of an alkyl group of 1 to 10 carbon atoms, a cycloalkyl group and an aryl group,

wherein X is selected from the group consisting of an alkoxy group of 1 to 5 carbon atoms ~~or~~ and a halogen atom,

wherein Y is a residue of a hydroxyl group of an aliphatic diol ~~of~~ comprising 2 to 4 carbon atoms,

wherein k is an integer of 0 to 2, and

n is 0 or 1.

Claim 9 (Currently Amended): The process for producing a cycloolefin addition polymer as claimed in claim 8, wherein the cycloolefin compound ~~of represented by the~~ formula (2)-1 ~~and/or the cycloolefin compound represented by the~~ or formula (2)-2 is used in a total amount of 0.1 to 30% by mol in the whole amount of all the cycloolefin monomers.

Claim 10 (Currently Amended): The process for producing a cycloolefin addition polymer as claimed in claim 1 ~~any one of claims 1 to 9~~, wherein the cycloolefin monomer of ~~the~~ formula (1) in which  $A^1$  to  $A^4$  are each independently a hydrogen atom or a hydrocarbon group of 1 to 15 carbon atoms is used in an amount of not less than 50% by mol in the whole amount of all the cycloolefin monomers.

Claim 11 (New): The process for producing a cycloolefin addition polymer as claimed in claim 2, wherein the multi-component catalyst further comprises, ~~in addition to the component (a) and the component (b-2),~~

(d) an organoaluminum compound.

Claim 12 (New): The process for producing a cycloolefin addition polymer as claimed in claim 11, wherein the content of the organoaluminum compound (d) is in the range of 0.1 to 200 mol based on 1 gram atom of palladium of the palladium compound (a).

Claim 13 (New): The process for producing a cycloolefin addition polymer as claimed in claim 2, wherein the palladium compound (a) is an organic carboxylate of palladium or a  $\beta$ -diketone compound of palladium.

Claim 14 (New): The process for producing a cycloolefin addition polymer as claimed in claim 3, wherein the palladium compound (a) is an organic carboxylate of palladium or a  $\beta$ -diketone compound of palladium.

Claim 15 (New): The process for producing a cycloolefin addition polymer as claimed in claim 4, wherein the palladium compound (a) is an organic carboxylate of palladium or a  $\beta$ -diketone compound of palladium.

Claim 16 (New): The process for producing a cycloolefin addition polymer as claimed in claim 2, wherein the multi-component catalyst is a catalyst prepared in the presence of at least one compound selected from the group consisting of a polycyclic monoolefin comprising a bicyclo[2.2.1]hept-2-ene structure, a non-conjugated diene comprising a bicyclo[2.2.1]hept-2-ene structure, a monocyclic non-conjugated diene, a straight-chain non-conjugated diene, and combinations thereof.

Claim 17 (New): The process for producing a cycloolefin addition polymer as claimed in claim 3, wherein the multi-component catalyst is a catalyst prepared in the presence of at least one compound selected from the group consisting of a polycyclic monoolefin comprising a bicyclo[2.2.1]hept-2-ene structure, a non-conjugated diene comprising a bicycle[2.2.1]hept-2-ene structure, a monocyclic non-conjugated diene, a straight-chain non-conjugated diene, and combinations thereof.

Claim 18 (New): The process for producing a cycloolefin addition polymer as claimed in claim 4, wherein the multi-component catalyst is a catalyst prepared in the presence of at least one compound selected from the group consisting of a polycyclic monoolefin comprising a bicyclo[2.2.1]hept-2-ene structure, a non-conjugated diene comprising a bicycle[2.2.1]hept-2-ene structure, a monocyclic non-conjugated diene, a straight-chain non-conjugated diene, and combinations thereof.

Claim 19 (New): The process for producing a cycloolefin addition polymer as claimed in claim 5, wherein the multi-component catalyst is a catalyst prepared in the presence of at least one compound selected from the group consisting of a polycyclic monoolefin comprising a bicyclo[2.2.1]hept-2-ene structure, a non-conjugated diene comprising a bicycle[2.2.1]hept-2-ene structure, a monocyclic non-conjugated diene, a straight-chain non-conjugated diene, and combinations thereof.

Claim 20 (New): The process for producing a cycloolefin addition polymer as claimed in claim 2, wherein the multi-component catalyst is a catalyst prepared in the presence of bicyclo[2.2.1]hept-2-ene, a bicyclo[2.2.1]hept-2-ene derivative comprising one or more hydrocarbon groups comprising 1 to 15 carbon atoms, or a combination thereof.